

TRH Trial Hill Land System

Steep slopes east of Lyndoch

Area: 21.0 km²

Annual rainfall: 550 – 700 mm average

Geology: The land system is formed on phyllites and schists of the Saddleworth and Balhannah Formations. There are minor marble or limestone lenses and gneissic intrusions. These rocks are within a metre or so of the land surface over most of the area, and there is extensive outcrop on some steeper slopes. Minor accumulations of locally derived wash deposits occur in valley floors. Subsoil carbonate layers occur sporadically where there has been insufficient leaching, mainly due to lower rainfall on the western side of the land system.

Topography: The Trial Hill Land System encompasses the western escarpment of the Mount Lofty Ranges from near Bethany to south east of Lyndoch. The landscape is predominantly steep hillslopes with gradients of 30-75%. The slopes are dissected by deeply entrenched water courses flowing in an overall westerly direction. There are minor landslips on steeper slopes.

Elevation: 280 m on western lower slope margins, to 570 m on the eastern edge

Relief: Up to 200 m

Soils: The typical soils are sandy loams, generally with red clayey subsoils, but often forming directly in weathering rock. In the west, some have carbonate in the lower subsoil. Deep sandy soils occur in creek flats.

Main soils: *Hillslopes*

L1a	Shallow stony sandy loam
L1b	Shallow stony loam
K3	Sandy loam over red clay
D1	Sandy loam over red alkaline clay

Minor soils: *Hillslopes*

L1c	Shallow gritty loamy sand
B4/B5	Gradational loam over calcareous rock

Creek flats

M1	Deep sandy alluvial soil
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Main features: The Trial Hill Land System is a range of steep strongly dissected slopes with a predominantly westerly aspect. Rocky outcrops are common on steeper slopes. Soils are shallow to moderately deep over metamorphosed medium to coarse grained sedimentary rocks. Most have sandy loam surfaces, with or without red clayey subsoils, depending on the nature of the underlying rock and the steepness of the slope. The soils are moderately fertile, but with variable waterholding capacities. The steepness of the terrain precludes intensive land uses; most of the land is best suited to grazing. Maintenance of fertility and control of acidification are the main issues.



Soil Landscape Unit summary: 2 Soil Landscape Units (SLUs) mapped in the Trial Hill Land System

SLU	% of area	Main features #
AyE	98.8	<p>Steep to very steep hills formed on phyllites and schists of the Saddleworth and Balhannah Formations, with minor marble and limestone lenses and gneissic intrusions. Slopes range from 30% to 75%. Relief is up to 200 metres. Drainage channels are very well defined, narrow and mostly unmappable. They are often gullied.</p> <p>Soils are mainly loamy, usually with reddish clay subsoils, but shallow soils formed directly on weathering rocks are common. On the lower rainfall western slopes, there is some carbonate accumulation in the subsoils. There are strata of calcareous rocks giving rise to shallow loams over carbonate layers, and igneous intrusions giving rise to shallow, gravelly soils. Miscellaneous alluvial soils occur adjacent to water courses.</p> <p>Main soils on hillslopes: <u>Shallow stony sandy loam</u> - L1a (C) <u>Shallow stony loam</u> - L1b (C) <u>Sandy loam over red clay</u> - K3 (C) <u>Sandy loam over red alkaline clay</u> - D1 (L) <u>Gradational loam over limestone</u> - B4/B5 (M) on limestone beds <u>Shallow gritty loamy sand</u> - L1c (M) on gneissic intrusions</p> <p>The steep slopes are the major limitation to land use, limiting use of most of the land to grazing. Fertility maintenance and acidity control are the main management issues. Steeper slopes prone to landslip require protection by deep rooted perennial vegetation.</p>
LtE	1.2	<p>Narrow creek flats with well defined watercourses.</p> <p>Main soil: <u>Deep sandy alluvial soil</u> - M1 (D)</p> <p>These small flats have deep soils and gentle slopes. However they are small and scattered, with limited potential for intensive development.</p>

PROPORTION codes assigned to soils within Soil Landscape Units (SLU):

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| (D) Dominant in extent (>90% of SLU) | (C) Common in extent (20–30% of SLU) |
| (V) Very extensive in extent (60–90% of SLU) | (L) Limited in extent (10–20% of SLU) |
| (E) Extensive in extent (30–60% of SLU) | (M) Minor in extent (<10% of SLU) |

Detailed soil profile descriptions:**B4/B5** Gradational loam over limestone (Lithocalcic / Petrocalcic, Red / Black Dermosol)

Medium thickness dark, crumbly clay loam, overlying a well structured reddish brown to black clay loam to light clay. A carbonate pan or soft carbonate layer occurs before 50 cm, grading to weathering calcareous siltstone, marble or limestone by 100 cm.

D1 Sandy loam over red alkaline clay (Calcic, Red Chromosol)

Medium thickness loamy surface soil with a paler and stony A2 horizon, overlying a dark reddish brown, well structured clay subsoil which is highly calcareous from about 50 cm. Weathering, calcified siltstone or slate occurs within 100 cm.

K3 Sandy loam over red clay (Sodic, Eutrophic, Red Chromosol)

Medium thickness sandy loam to sandy clay loam surface soil, with a pale and very gravelly A2 horizon, overlying a red or dark reddish brown well structured clay subsoil grading to weathering schist or phyllite within 100 cm.

L1a Shallow stony sandy loam (Basic, Paralithic, Leptic Tenosol)

Thick stony sandy loam forming in weathering schist or phyllite at 50 cm or less.

L1b Shallow stony loam (Paralithic, Leptic Tenosol)

Thick stony loam forming in weathering phyllite or schist at 50 cm or less.



- L1c** Shallow gritty loamy sand over gneiss (Basic, Lithic, Bleached-Leptic Tenosol)
Thick, gritty and gravelly loamy coarse sand to coarse sandy loam, grading to weathering gneiss within 50 cm.
- M1** Deep sandy alluvial soil (Regolithic, Red-Orthic Tenosol)
Deep red to brown sand to clayey sand with bands of grit and gravel, and clayey lenses occurring randomly.

Further information: [DEWNR Soil and Land Program](#)

